DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-001105
Date Inspected: 23-Dec-2007

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 600
OSM Departure Time: 1630
Location: Shanghai, China

CWI Name:	See Below	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☑ Yes ☐ No ☐ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Tower Fabrication

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Mr. Paul Dawson, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following:

Orthotropic Box Girder (OBG) and Tower Mock Up:

CWI Inspectors: Sun Wei, Ye Yong Jun, Wu Ming Kai, Fu Guo Gang

The QA Inspector observed ZPMC personnel perform heat straightening of elevation 89 meter MSUB-MA22 plate as directed by HSR1(CT)-170. The QA inspector observed Quality Control CWI Inspector Mr. Ju Guo Gang monitoring the heat temperature using a laser indicating device, and the maximum temperature that had been recorded on the HSR document is 526° C. Items observed appear to comply with the requirements of the HSR listed above. No weights were used during this flame straightening.

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The QA Inspector observed ZPMC welder Mr. Ge Hungqi stencil 37780 is using welding procedure WPS-B-T-4312-TC-4P-2 to make a shielded metal arc partial penetration groove weld on MUSB-MA21 skin A weld #4. The QA Inspector observed E7018, 4.0 mm diameter electrodes, a welding current of approximately 170 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to

comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Ju Jan Jie stencil 66268 is using welding procedure WPS-B-T-4312-TC-4P-2 to make a shielded metal arc partial penetration groove weld on MUSB-MA21 skin A weld #4. The QA Inspector observed E7018, 4.0 mm diameter electrodes , a welding current of approximately 175 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Jiang Xiaohu stencil 66155 is using welding procedure WPS-B-T-4113-1 to make a shielded metal partial penetration groove arc weld on MUSB-MA25 weld #18B. The QA Inspector observed E9018, 4.0 mm diameter electrodes, a welding current of approximately 165 amps and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed ZPMC welder Mr. Dai Lu stencil 48659 is using welding procedure WPS-B-T-2133 to make a flux cored partial penetration arc groove weld on MUSB-MA25 weld #22. The QA Inspector observed 1.4 mm diameter E71T-1 welding electrode with a welding current of approximately 180 amps, 23.9 volts and a minimum base material preheat temperature of 160° C. Items observed by the QA Inspector appear to comply with project specifications.

The QA Inspector observed three ZPMC welders using welding procedure specification WPS-B-T-2132-3 to make flux cored fillet welds on six OBG side plate 03, PL-71H stiffener welds at the same time. ZPMC has multiple flux cored welding manipulators attached to a movable gantry that runs on a track along the length of the stiffener plates. The QA Inspector observed a welding travel speed of approximately 455 mm per minute. As the welding commences, each of the welders is responsible for two of the flux cored welding heads. All welders are using 1.4 mm diameter E71T-1 rolls of electrodes that have been marked as being installed earlier today. Welder Mr. Liz Hanqian stencil 48810 completed weld SP003-01-011 with a welding current of approximately 280 amps and 29.0 volts and weld SP003-01-012 with a welding current of approximately 280 amps and 30.0 volts. Welder Mr. Xin Meng stencil 53742 completed weld SP003-01-015 with a welding current of approximately 305 amps and 28.4 volts and weld SP003-01-016 with a welding current of approximately 295 amps and 29.5 volts. Welder Mr. Li Shuliang stencil 48801 completed weld SP003-01-019 with a welding current of approximately 305 amps and 28.4 volts and weld SP003-01-020 with a welding current of approximately 310 amps and 28.3 volts. Items observed by the QA Inspector appear to comply with project specifications.

The Caltrans Quality Assurance (QA) Inspector observed ZPMC nondestructive inspector Mr. Li Li Ming performing ultrasonic (UT) shear wave and lamination inspections of weld SP021-01-075 and other complete joint penetration welds. The QA Inspector observed Mr. Ming appears to be obtaining full scanning coverage of the weld. See the photograph below for additional information. Items observed by the QA Inspector appear to comply with project specifications.

WELDING INSPECTION REPORT

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Summary of Conversations:

See above for summary of conversations.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mazen Wahbeh, (818) 292-0659, who represents the Office of Structural Materials for your project.

Inspected By:	Dawson,Paul	Quality Assurance Inspector
Reviewed By:	Cochran,Jim	QA Reviewer